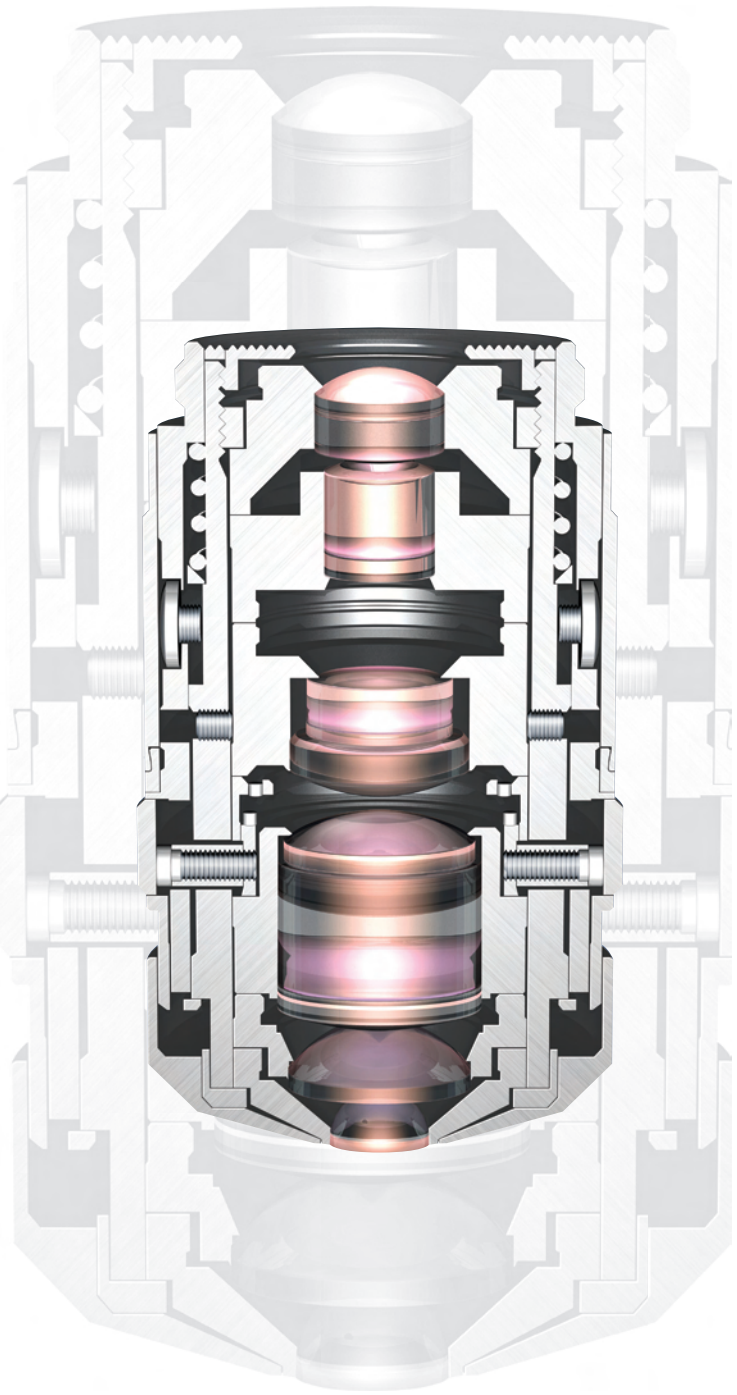

“With the user, for the user” Leica Microsystems

The statement by Ernst Leitz in 1907, “with the user, for the user,” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed fi ve brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: **Living up to Life**.

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Leica Microsystems operates globally in four divisions, where we rank with the market leaders

- **Life Science Division**
- **Industry Division**
- **Biosystems Division**
- **Surgical Division**

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Leica MICROSYSTEMS

Order No.: 11914709

Cleaning of Microscope Optics

Living up to Life

Leica MICROSYSTEMS

1 Considerations before cleaning

Which image quality do you expect?

Optimize all microscope settings:

Aperture, Köhler, correction ring, etc.

Check your specimen

I Use standard with proven quality

II Use cleaned specimen

Check slide and cover glass

Check immersion medium

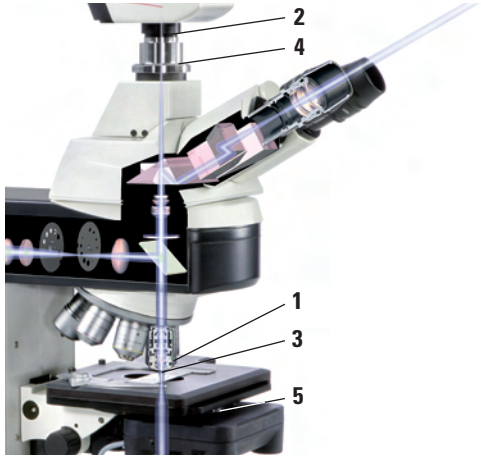
I Same type as embedding medium of specimen

II Is immersion medium from the same lot?

III Only use recommended types

IV No Anisol

2 Where to clean and where not



Where to clean

1 Front lens of objective

2 Cover glass of camera sensor

3 Cover slip and specimen slide

4 C-mount

5 Condenser lens

6 Misc. glass surfaces

Where not to clean

I Filter cubes

II All inside optics of a microscope

3 How to locate dirt

Turn camera and inspect image

I If dirt is turning in the image → not located in camera

II If dirt stays → camera

Turn objective, condenser, C-mount

I If dirt is turning with image → objective, condenser, etc.

Control the relevant elements macroscopically

I Magnifying glass or oculars upside down

Front lens

I Turn it

II Look from the back against a bright background

4 Different kinds of dirt

Loosely or not permanently attached dirt

I Glass (broken slides, cover slips, etc.)

II Skin, dander

III Pollen, etc.

Attached dirt

I Water soluble

II Solvent soluble

III In practice often a mixture

5 How to clean

Aim of cleaning

I Complete elimination of dust and dirt for perfect image quality

II No remaining residues on the optical parts

III No damage of optical parts

General procedure

I Locate dirt

II Inspect dirt

III Remove dust

IV Remove water soluble dirt

V Remove solvent soluble dirt

VI Inspect result

VII Repeat from **III** to **VI** if necessary

Remove dust

I If possible do it manually

II Only use specified compressed air

a Contamination with oil may cause difficulties to remove residues

III Perfect tool: bellows

Remove attached dirt

I Never use rubbing materials, papers, microfibre cloths

II Never clean dry

III Always start to clean water soluble dirt

a If you can see grease start with solvents

IV All solvents for cleaning should be absolutely clean

a PA solvents (ultra pure)

b Destilled or demineralized water

c No ammonium containing glass cleaner like Sidolin, Sparkle, etc.

V All tools should be absolutely clean

a Use certified wound cotton sticks and dental cotton pads to avoid lint (no Q-tips or similar!)

Remove water soluble dirt

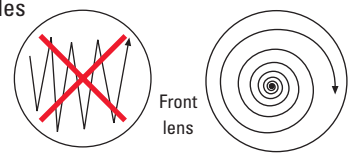
I Use only clean, deionised water

a Simple method: breathe upon the surface

II Use a cotton stick

a Clean from the centre toward the edge in concentric circles

III Inspect result



Remove solvent soluble dirt

I Use ultra pure solvents

a Ethanol PA

b Acetone PA (be careful, may harm plastics and objective labels)

II Use a cotton stick, dental cotton pad

a Cotton stick and cotton pad should only be moist, not dropping wet

b Clean from the centre toward the edge in concentric circles

III Inspect result

IV Still smudgy?

a Combine the methods: breathe upon the surface and clean with cotton stick and acetone

Leica Optics Cleaning Kit

Order number **11505508**